

QUARTERLY REPORT

**FOR JULY THROUGH SEPTEMBER 1995
INCLUDING DATA SUMMARY FOR
APRIL THROUGH JUNE 1995**

**OPERABLE UNIT 1 AND
OPERABLE UNIT 2
IM/IRA TREATMENT FACILITIES**

**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

PREPARED BY

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ENVIRONMENTAL RESTORATION PROJECTS**

Attachment 1

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A-OU02-001298

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1.0 INTRODUCTION

1.1 HISTORICAL PERSPECTIVE - OU1

The Operable Unit No. 1 (OU1) Water Treatment Facility located in Building 891 began operation in April 1992. Building 891 has historically been used to treat the following waters:

- . Groundwater collected from the 881 Hillside area (the French Drain Sump and the Collection Well);
- . Water collected in the Building 881 Footing Drain (collection and treatment of this water was discontinued in September 1994);
- . The majority of the water collected at the Main Decontamination Facility;
- . Some groundwater well purge water; and
- . Rainwater collected from the Building 891 Truck Dock and Tank Farm.

The French Drain Sump is pumped through piping directly to one of the Building 891 influent storage tanks each operating day. The depth of water level in the French Drain Sump typically regenerates from about a 1-foot low (after pumping) to 4-6 feet (over a one day period). The water from the Collection Well is pumped into a trailer-mounted container each operating day, and the container is then transported to Building 891 for off-loading and treatment. Sampling and/or process knowledge is used to determine if waters from the Main Decontamination Facility require treatment at the Building 891 Treatment Facility.

The water from the French Drain Sump and from the Collection Well is temporarily stored in one of two influent collection tanks prior to treatment. The water is then treated with an ultraviolet (UV) light/hydrogen peroxide system for the removal of volatile organic compounds (VOCs), and a four-step ion exchange (IX) system for the removal of uranium, total dissolved solids, hardness, alkalinity, anions, and selected metals.

After treatment, the water is stored in one of three effluent storage tanks until laboratory sample results verify that the water chemistry meets OU1 Applicable or Relevant and Appropriate Requirements (ARARs) and is acceptable for discharge into the South Interceptor Ditch (SID).

1.2 HISTORICAL PERSPECTIVE - OU2

The Operable Unit No. 2 (OU2) Field Treatability Unit (FTU) Granular Activated Carbon (GAC) Treatment Units began operation in May, 1991, and the Radionuclides Removal System began operation in April 1992. The FTU has historically been used to treat the following waters:

- . Surface water collected from Surface Water Stations SW-059, SW-061, and SW-132 (collection and treatment of water from SW-061 and SW-132 was discontinued on May 6, 1994);
- . Some of the water collected at the Main Decontamination Facility;
- . Some groundwater well purge water; and
- . Rainwater collected from FTU trailer containments.

Collected surface water was pumped directly from the surface water stations to Equalization Tank T-200 via a heat-traced pipeline. However in May 1995, because heavy rains interrupted power at the SW-059 weir and may have comprised the integrity of the pipeline, it became necessary to collect and transport water from SW-059 to T-200 using a trailer-mounted container. The use of the container for collection and transport will be discontinued as soon as construction of the double-walled storage tank adjacent to SW-59 is complete.

Collected surface water was stored in Equalization Tank T-200 until enough water was present to justify initiating a batch treatment. The water was then treated using pH adjustment, chemical precipitation, and cross-flow membrane filtration for the removal of radionuclides and metals, and GAC for the removal of VOCs. No effluent holding tank existed at OU2, and therefore treated effluent from the FTU was discharged directly to South Walnut Creek as it was processed. The last process run for the OU2 FTU trailers at the OU2 location was August 8, 1995, and the final reading on the OU2 FTU totalizer was 24,856,900 gallons.

1.3 SITEWIDE TREATMENT FACILITY¹

During the July through September 1995 period, work continued on the consolidation of the OU1 and OU2 treatment facilities to create the Sitewide Treatment Facility. It is planned that the Sitewide Treatment Facility will consist of the following unit operations:

- . Chemical precipitation (FTU);
- . Cross-flow membrane microfiltration (FTU);
- . Ultraviolet Light/Hydrogen Peroxide Oxidation (Bldg 891);
- . Ion Exchange (Bldg 891); and
- . Granular Activated Carbon (may be installed in Bldg 891)¹.

On August 18, 1995 the OU2 Field FTU trailers T-900A and T-900B were relocated to the south side of the OU1 Building 891 Treatment Facility. The OU2 Equalization Tank T-200 was relocated to OU1 on October 17, 1995. The OU2 FTU trailers will not be operational until construction of the Sitewide Treatment Facility is complete (anticipated completion is late November 1995).

During August 1995, in preparation for the relocation of the OU2 FTU trailers and T-200 to the south side of Building 891, it was necessary to begin transporting OU2 SW-059 water to the OU1 Influent Storage Tank T-201 for subsequent treatment in Building 891. To date all OU2 water transported to OU1 has been transferred to T-201. OU2 water staged in T-201 was first treated in Building 891 on September 18, 1995.

The Sitewide Treatment Facility flowpath should be flexible enough to allow waters to be treated through particular unit processes as necessary, and to allow for re-treatment if necessary.

¹It was anticipated that the Sitewide Treatment Facility would also include cartridge filtration, however this project was canceled due to budget cuts.

2.0 TREATMENT FACILITY OPERATIONS (JULY, AUGUST, SEPTEMBER 1995)

2.1 QUANTITIES OF WATER COLLECTED AND TREATED

Table 2-1 summarizes the quantities of water treated at Building 891 and the FTU for the period July through August 1995. During this period Building 891 collected water from the following sources:

- . OU1 French Drain Sump
- . OU1 Collection Well
- . Main Decontamination Facility
- . Ground water purge water
- . OU2 Surface Water Station SW-59 (Note that since August 8, 1995 15,896 gallons of water collected at Surface Water Station SW-59 has been transferred to Building 891 for treatment.)

From July through August 8, 1995, the OU2 FTU collected only water from Surface Water Station SW-59.

As can be seen from Table 2-1, a total of approximately 103,011 gallons of water was treated at the Building 891, and 17,825 gallons was treated through the FTU during July and August 1995. No water was processed through the FTU in September 1995. Please note that because both Building 891 and the FTU have influent storage tanks, the amount of water treated may be less than or greater than the amount of water collected for any given period.

Two effluent tanks, each approximately 110,000 gallons, of treated effluent were released from Building 891 to the SID during the July, August, September 1995 period (refer to Table 3-4 for discharge dates, etc.). Approximately 3,085,570 gallons of water has been processed through Building 891 to date.

2.2 CHEMICAL USAGE

The following chemicals are utilized during wastewater treatment operations at the Sitewide Treatment Facility:

- . Building 891
 - Hydrogen peroxide (UV oxidation)
 - Hydrochloric acid (ion exchange regeneration and pH adjustment)
 - Sodium hydroxide (ion exchange regeneration)
- . FTU
 - Sulfuric acid (pH adjustment: TK-1 and effluent)
 - Calcium hydroxide (precipitation)
 - Ferric sulfate (precipitation)

TABLE 2-1
SITELAND TREATMENT FACILITY
QUANTITIES OF WATER COLLECTED AND PROCESSED a/

Month/Year	Gallons Collected from the OU1 French Drain Sump b/	Gallons Collected from the OU1 Collection Well b/	Gallons Accepted at Bldg 891 from the MDF and Other Sources c/	Gallons Pumped from Bldg. 891 Containments	Gallons Collected from the OU2 SW-59 d/	Gallons Accepted at OU2 FTU from the MDF and Other Sources	Gallons Processed through the IX at Bldg 891	Gallons Processed through the OU2 GAC
Jul-95	32,718	2,025	0	3,205	7,770	0	44,235	8,225
Aug-95	16,632	4,210	4,666	0	8,860	0	25,805	9,600
Sep-95	14,840	1,960	300	3,130	15,896 e/	0	32,971	no treatment
3rd Quarter Totals	64,190	8,195	4,966	6,335	32,526	0	103,011	17,825

a/ Please note that because both Building 891 and the OU2 FTUs are equipped with influent storage tanks, the quantity of water collected will not necessarily equate to the quantity of water processed.

b/ This groundwater is collected each operating day (i.e., 5 days per week).

c/ Other sources may include groundwater purge water, surface water purge water, etc.

d/ This surface water is collected daily (i.e., 7 days per week).

e/ These 15,896 gallons were transferred to Building 891 for treatment.

- Hydrogen peroxide (chemical cleaning of filter modules)
- Sodium hydroxide (pH adjustment: TK-2)
- Sodium hypochlorite (chemical cleaning of filter modules)

Table 2-2 summarizes the quantities of chemicals utilized during the period of July through September 1995.

2.3 WASTE GENERATION

The following types of waste are generated during normal wastewater treatment operations at Building 891 and the FTU:

Building 891

- used filter socks
- neutralized ion exchange regenerant
- personnel protective equipment

FTU

- filter press sludge cake
- personnel protective equipment
- used filter membranes
- spent granular activated carbon

Table 2-3 summarizes the types and quantities of the waste generated during wastewater treatment operations at Building 891 and the FTU for the third quarter of 1995. Three tanker truck loads (approximately 12,258 gallons) of neutralized regenerant water from Tank T-210 were sent to the 374 evaporator for processing this quarter.

In preparation for the August relocation of the FTU trailers to the south side of Building 891, two white drums were packaged with filter cake and four white drums were packed with used filter membranes.

TABLE 2-2
SITEWIDE TREATMENT FACILITY
CHEMICAL USAGE

Month/Year	Building 891				FTU				
	Hydrochloric Acid 22 Baume (gallons)	Sodium Hydroxide 50% (gallons)	Hydrogen Peroxide 50% (gallons)	Sulfuric Acid a/ 98% (gallons)	Calcium Hydroxide (pounds)	Ferric Sulfate (pounds)	Hydrogen Peroxide 35% (gallons)	Sodium Hydroxide 50% (gallons)	Sodium Hypochlorite (gallons)
Jul-95	275	120	9.25	3.5	9	10	5	0	0
Aug-95	0	84	7.4	0.5	13	10	5	55	0
Sep-95	75	76	14.8	0.5	0	0	0	0	0
3rd Quarter Totals	350	280	31.45	4.5	22	20	10	55	0

a/ Occasionally a small amount (approx. 1 gallon) of this sulfuric acid is used in Building 891 for effluent pH adjustment.

TABLE 2-3
SITEWIDE TREATMENT FACILITY
WASTE GENERATION

Month/Year	Building 891			FTU				Bldg 891 and FTUs	
	Filter Socks (55-gal drum)	Neutralized Regenerant to 374 (gallons)	Sludge Production (55-gal drum)	Spent GAC (pounds)	Used Filter Membranes (55-gal drum)	Personal Protective Equip. (55-gal drum)	a/		
Jul-95	--	8,310	0	0	0	0	--		
Aug-95	--	0	2	0	0	4	--		
Sep-95	--	3,948	0	4000	0	0	--		
3rd Quarter Totals	0 b/	12,258	2	4000	4	4	2 b/		

a/ PPE is monitored for radiological contaminants, and if determined to be clean for unrestricted release, is sent to the Rocky Flats landfill for disposal. To date, no PPE from Building 891 or the FTUs has been found to be contaminated.

b/ These drums are filled gradually, and therefore only quarterly totals are reported.

3.0 INFLUENT AND EFFLUENT SAMPLING (APRIL, MAY, JUNE 1995)

3.1 881 HILLSIDE GROUNDWATER CHARACTERISTICS

The French Drain Performance Monitoring Plan (FDPMP) requires monitoring of French Drain performance. The FDPMP requires groundwater level measurements of designated French Drain monitoring wells 10092, 10192, 10292, 10392, 10492, 10592, 10692, 10792, 10892, 10992, 11092, 39991, 45391, 4887, 35691, 31491, and 4787 ². Additionally, quarterly water quality sampling of the wells is required. Not all locations are sampled for all parameters due to the small quantities of water generated at many of these locations.

Table 3-1 presents a synopsis of the selected ground water monitoring well data for the following categories of constituents:

- . VOCs
- . Radionuclides
- . Metals
- . Water Quality

All constituents which exceeded OU1 ARARs are included in Table 3-1, however compounds which did not exceed OU1 ARARs are not necessarily included in the table.

As can be seen from Table 3-1 during the April, May, and June 1995 period neither VOCs nor radionuclides exceeded OU1 ARARs. Those constituents which did exceed OU1 ARARs include the following:

GROUND WATER WELLS

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>ARAR</u>
Selenium	11.8 to 44.7	ug/L	10
Nitrate/Nitrite	30.9	mg/L	10
Sulfate	368 to 453	mg/L	250
Total Dissolved Solids	536 to 1640	mg/L	400

Figure 3-1 is a water level map that was constructed from the July through August 1995 water level data. This water level data is taken quarterly, and this map was developed based on water levels taken in July 1995. Comparison of this map with the previous map developed from water levels taken in April 1995, indicates that areas of 881 Hillside which were unsaturated in April 1995 were saturated in July 1995.

² Well #'s 10192 and 10393 were reported as dry. Well #39991 was reported as damaged in April 1993, and Well #45391 was reported as damaged in April 1995. Bedrock wells are not used during the development of the groundwater level maps.

TABLE 3-1
COMPARISON OF SELECTED GROUND WATER WELL CONSTITUENTS TO OU1 ARARS
APRIL, MAY, JUNE 1995

COMPOUND	OU1 ARAR	UNITS	GROUND WATER WELLS									
			WELL 10192 Alluvial	WELL 10492 Bedrock	WELL 10592 Alluvial	WELL 10692 Alluvial	WELL 10792 Bedrock	WELL 10992 Alluvial	WELL 11092 Alluvial			
1,1,1 Trichloroethane	200	ug/L	30-May-95 0.5 U a/	24-May-95 0.5 U	23-May-95 0.5 U	23-May-95 0.5 U	24-May-95 0.5 U	24-May-95 0.5 U	24-May-95 0.5 U			
1,1,2 Trichloroethane	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
1,1 Dichloroethane	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
1,1 Dichloroethene	7	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
1,2 Dichloroethane	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Acetone	50	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Carbon Disulfide	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Carbon Tetrachloride	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Chloroform	NA b/	ug/L	0.5 U	0.5 U	0.5 U	0.3 J	0.5 U	0.5 U	0.5 U			
Methylene Chloride	5	ug/L	0.5 U	0.2 BJ	0.3 BJ	0.3 BJ	0.3 BJ	0.5 U	0.5 U			
Tetrachloroethene	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Toluene	2000	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.9 U	0.5 U	0.5 U			
Trichloroethene	5	ug/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U			
Gross Alpha c/	15	pCi/L	7.1	13.08 C	-- d/	12.88 C	--	--	--			
Copper	200	ug/L	20.1 B	24.5 B	--	42	19.8 B	--	--			
Iron	1000	ug/L	70.2 B	53.6 B	--	66.4 B	37	--	--			
Lead	50	ug/L	1.2 U	1.1 U	--	1.1 U	3.3	--	--			
Selenium	10	ug/L	4.5 B	11.8	--	5.1	44.7	--	--			
Nitrate/Nitrite	10	mg/L	5.12	0.05 U	8.36	6.92	6.4	30.9	--			
Sulfate	250	mg/L	64.6	63.2	368	453	139	--	--			
Total Dissolved Solids	400	mg/L	700	536	1370	1640	145	--	--			

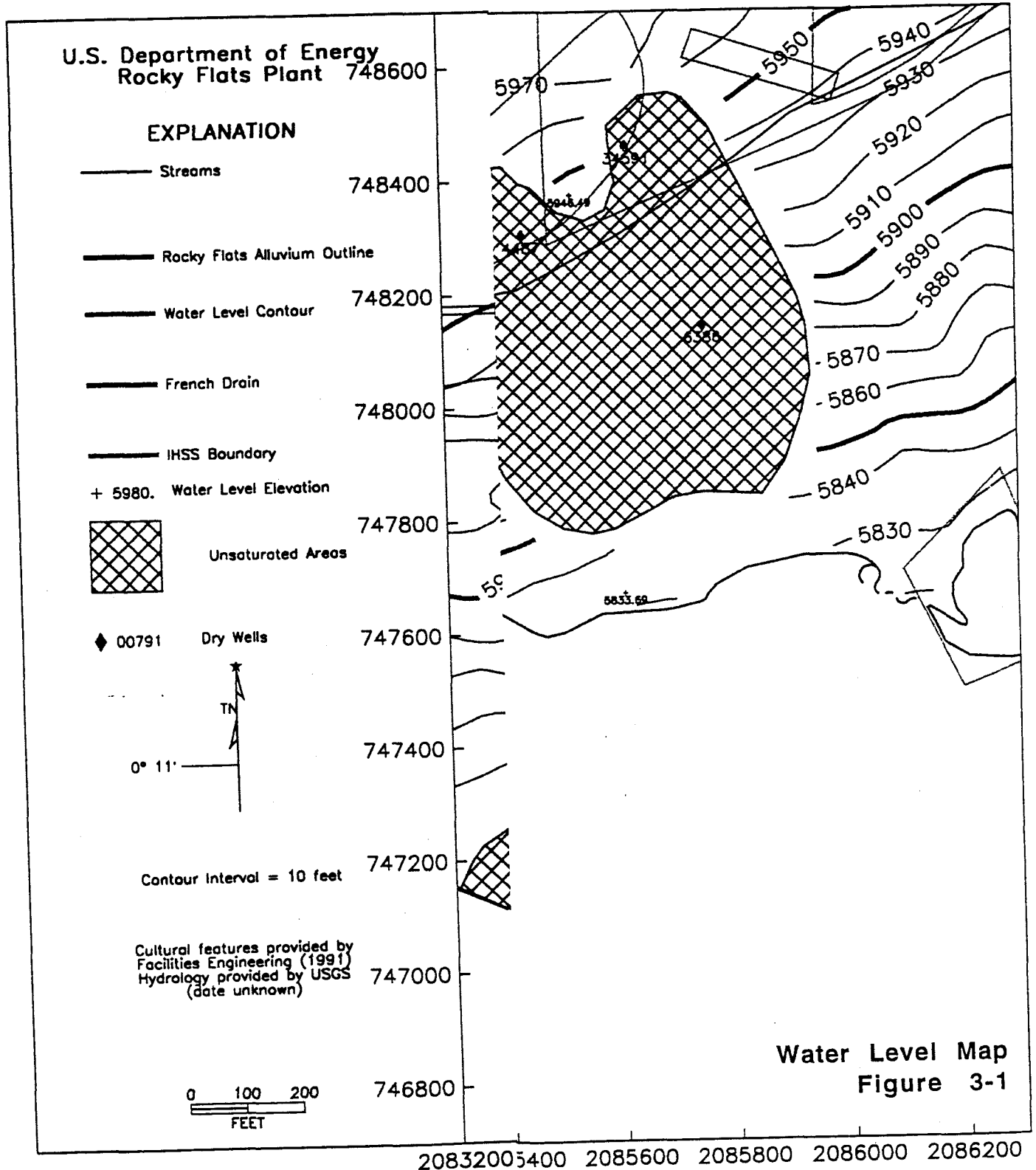
a/ Refer to Appendix A for an explanation of the data qualifiers.

b/ "NA" = No ARAR exists for this constituent.

c/ Note that this table does not include the error bounds on the radiological data.

d/ "--" = Data not available.

Water Level Map



3.2 OU1 FRENCH DRAIN SUMP AND COLLECTION WELL CHARACTERISTICS

Collection Well water is now collected separately from the French Drain water, and collection and treatment of water from the Building 881 Footing Drain was discontinued in September 1994. Therefore the current French Drain Sump data is representative of only those waters that seep from the groundwater table into the French Drain. For the April, May, and June 1995 period, monthly sampling was performed at the French Drain Sump and the Collection Well.

Table 3-2 presents a synopsis of selected French Drain Sump and Collection Well data for the following categories of constituents:

- . VOCs
- . Radionuclides
- . Metals
- . Water Quality

All constituents which exceeded OU1 ARARs are included in Table 3-2, however compounds which did not exceed OU1 ARARs are not necessarily included in the table.

As can be seen in Table 3-2³, samples taken from the French Drain Sump during the April through June 1995 period did not exceed OU1 VOC or radionuclide ARARs. Those constituents which did exceed OU1 ARARs include the following:

FRENCH DRAIN SUMP

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>OU1 ARAR</u>
Selenium	27.9 to 29.8	ug/L	10
Total Dissolved Solids	618 to 739	mg/L	400

Table 3-2 also presents a synopsis of Collection Well data for the April through June 1995 period. As can be seen in Table 3-2, samples taken from the Collection Well continue to contain elevated levels of VOCs. Those constituents which did exceed OU1 ARARs include the following:

COLLECTION WELL

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>OU1 ARAR</u>
1,1 Dichloroethene	29 to 34	ug/L	7
Carbon Tetrachloride	9 to 17	ug/L	5
Tetrachloroethene	69 to 89	ug/L	5
Trichloroethene	350 to 490	ug/L	5
Gross alpha	19 to 22	pCi/L	15
Selenium	381 to 632	ug/L	10

³As of January 1995, detection limits for VOCs analyzed by gas chromatography/mass spectrometry (GC/MS) are reported at 10 ug/L. The RFETS General Radiochemistry and Routine Analytical Services Protocol (GRRASP) requires data to be reported as estimated if compounds are detected at or above 1 ug/L but below 10 ug/L.

TABLE 3-2
COMPARISON OF SELECTED CONSTITUENTS TO OU1 ARARS
APRIL, MAY, JUNE 1995

COMPOUND	OU1 ARAR	UNITS	FRENCH DRAIN SUMP			COLLECTION WELL		
			4-Apr-95	15-May-95	7-Jun-95	4-Apr-95	15-May-95	7-Jun-95
1,1,1 Trichloroethane	200	ug/L	10 U a/	-- b/	10 U	11	--	16
1,1,2 Trichloroethane	5	ug/L	10 U	--	10 U	10 U	--	10 U
1,1 Dichloroethane	5	ug/L	10 U	--	10 U	10 U	--	10 U
1,1 Dichloroethene	7	ug/L	10 U	--	10 U	29	--	34
1,2 Dichloroethane	5	ug/L	10 U	--	10 U	10 U	--	10 U
Acetone	50	ug/L	10 U	--	10 U	10 U	--	10 U
Carbon Disulfide	5	ug/L	10 U	--	10 U	10 U	--	10 U
Carbon Tetrachloride	5	ug/L	10 U	--	10 U	17	--	9 J
Chloroform	NA c/	ug/L	10 U	--	10 U	10 U	--	10 U
Methylene Chloride	5	ug/L	10 U	--	10 U	10 U	--	10 U
Tetrachloroethene	5	ug/L	10 U	--	10 U	89	--	69
Toluene	2000	ug/L	10 U	--	10 U	10 U	--	10 U
Trichloroethene	5	ug/L	10 U	--	10 U	490 D	--	350 D
Gross Alpha d/	15	pCi/L	5.79 C	12.09 C	7.5 C	14.215 C	19,043 C	21.77 C
Copper	200	ug/L	2 U	--	2 U	2 U	--	2 U
Iron (total)	1000	ug/L	12 U	--	12 U	33.5 B	--	12 U
Lead	50	ug/L	2 U	--	2.1 B	2 U	--	2 U
Selenium	10	ug/L	29.8	--	27.9	632	--	381
Hardness (calculated from Ca and Mg)	NA	mg/L	323	--	402	597	--	593
Chloride	250	mg/L	90.6	89.7	81.6	164	170.299	177.7
Nitrite/Nitrate	10	mg/L	1.31	1.65	2.89	7.107	7.106	2.778
Sulfate	250	mg/L	108	136	114	231	255	366
Total Dissolved Solid	400	mg/L	618	739	664	1085	1119	1157

a/ Refer to Appendix A for an explanation of the data qualifiers.

b/ "--" = Data not available.

c/ "NA" = No ARAR exists for this constituent.

d/ Note that this table does not include the error bound on the radiological data.

COLLECTION WELL (continued)

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>OU1 ARAR</u>
Sulfate	255 to 366	mg/L	250
Total Dissolved Solids	1085 to 1157	mg/L	400

Various Tentatively Identified Compounds (TICs) were also identified during Collection Well sampling, however these compounds do not have associated OU1 ARARs.

3.3 OU2 SURFACE WATER CHARACTERISTICS

Surface water is sampled on a quarterly basis from SW-059, SW-061, and SW-132. Although the Environmental Protection Agency and the Colorado Department of Public Health and the Environment authorized the discontinuation of the collection and treatment of SW-061 and SW-132 on April 24, 1994, the two surface water stations continue to be sampled to verify that no increase in contamination is occurring. Collection and treatment for SW-061 and SW-132 was discontinued on May 6, 1994. Presently only SW-059 water is collected and treated.

Table 3-3 presents a synopsis of OU2 Surface Water data for the April through June 1995 period. As can be seen in Table 3-3, those constituents which did exceed OU2 ARARs include the following:

SURFACE WATER STATIONS SW-059, SW-061, and SW-132

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>OU2 ARAR</u>
Carbon Tetrachloride	14 to 120	ug/L	5
Chloroform	3 to 25	ug/L	1
Tetrachloroethene	20 to 37	ug/L	5
Trichloroethene	29 to 71	ug/L	5
Uranium, total	10.8 to 16.9	pCi/L	10
Manganese (dissolved)	269	ug/L	10
Zinc (total)	62.3 to 238	ug/L	50

Other compounds, such as 1,1,1-Trichloroethane and cis-1,2-Dichloroethene were also identified during the sampling, however these constituents do not have OU2 ARARs.

TABLE 3-3
COMPARISON OF SELECTED SW-059, SW-061 AND SW-132 DATA TO OU2 ARARS
APRIL, MAY, JUNE 1995

COMPOUND	OU2 ARARS	Units	SW 059		SW 061		SW 132	
			6-Jun-95		6-Jun-95		6-Jun-95	
1,1,1-Trichloroethane	NA a/	ug/L	9		12		0.5	U b/
1,1-Dichloroethane	NA	ug/L	2		0.7		0.5	
1,1-Dichloroethene	7	ug/L	5		0.8		0.5	U
1,2-Dichloroethane	NA	ug/L	1		0.50	U	0.5	U
Carbon Tetrachloride	5	ug/L	120 D		14		0.5	U
Chloroform	1	ug/L	25		3		0.5	U
Methylene Chloride	NA	ug/L	18 BJ		1 U		0.5	BJ
Tetrachloroethene	1	ug/L	20 D		37 D		1	
Trichloroethene	5	ug/L	71 D		29 D		1	
Vinyl Chloride	2	ug/L	0.7 J		1		0.5	J
cis-1,2-Dichloroethene	NA	ug/L	32 D		13		4	
Gross Alpha c/	11	pCi/L	4.2		3.5		3.2	
Uranium, (total - calculated d/)	10	pCi/L	16.925		8.124		10.83	
Aluminum (total)	200	ug/L	82.8 B		117 B		15	B
Copper (total)	25	ug/L	3.3 B		1.8 B		1.8	B
Iron (total)	1000	ug/L	74.8 B		127		194	
Lead (total)	5	ug/L	0.7 U		0.7 U		0.7	U
Manganese (total)	1000	ug/L	268		33.4		28.9	
Manganese (dissolved)	50	ug/L	269		31.1		25	
Selenium (total)	10	ug/L	2.5 U		2.5 U		2.5	U
Zinc (total)	50	ug/L	238 E		184 E		62.3	E
Hardness (as CaCO3 - calculated from Ca and Mg)	NA	mg/L	430		293		319	
Chloride	NA	mg/L	33.6		90		81.3	
Nitrate/Nitrite	NA	mg/L	-- e/		--		--	
Sulfate	NA	mg/L	48.9		39.3		56.1	
TDS	NA	mg/L	577		471		541	

- a/ "NA" = No ARAR exists for this constituent.
b/ Refer to Appendix A for an explanation of the data qualifiers.
c/ Note that this table does not include the error bounds on the radiological data.
d/ Based on the conversion for natural uranium of 1 mg/L = 677 pCi/L.
e/ "--" = Data not available.

3.4 TREATED EFFLUENT CHARACTERISTICS

Treated effluent from Building 891 is stored in one of three effluent tanks prior to discharge. An effluent tank is sampled once it is full, and if the data show that OU1 ARARs have not been exceeded the effluent tank is discharged. Table 3-4 presents a synopsis of selected effluent tank data for April through September 1995. These effluent tanks contained treated water from OU1 influent sources, the MDF, and miscellaneous purge water. None of these effluent tanks contained treated water from OU2 influent sources. The treated effluent water did not exceed OU1 ARARs (Note that not all analyzed compounds are presented on Table 3-4).

The OU2 FTU was not equipped with an effluent holding tank, and therefore treated effluent from the FTU was discharged directly to South Walnut Creek as it was processed. With the consolidation of the OU1 and OU2 treatment facilities into the Sitewide Treatment Facility, all treated effluent will be sent to a Bldg 891 effluent tank for holding, and will be sampled prior to discharge.

During the April, May, and June 1995 period, OU2 FTU treated effluent process samples were taken on May 1, May 22, and May 31. Data is not yet available for discharges which occurred during July and August 1995. The FTU did not discharge in September 1995. Table 3-5 presents a synopsis of the FTU discharge data for the May 1995 dates. As can be seen in Table 3-5, constituents which exceeded OU2 ARARs include the following:

FTU: TREATED EFFLUENT DISCHARGE (RS-7)

<u>Compound</u>	<u>Exceedance Range</u>	<u>Units</u>	<u>OU2 ARAR</u>
Aluminum (total)	6 7 5	ug/L	2 0 0

No other constituents exceeded OU2 ARARs.

TABLE 3-4
COMPARISON OF SELECTED TANK EFFLUENT DATA TO OU1 ARARS
APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER 1995

COMPOUND	OU1 ARARS	UNITS	Bldg 891 Effluent Tanks (discharge dates)		
			18-Apr-95 T-207	27-Jul-95 T-205	29-Sep-95 T-207
Trichloroethane 1,1,1	200	ug/L	5.0 U a/	1.00 U	0.5 U
Trichloroethane 1,1,2	5	ug/L	5.0 U	1.00 U	0.5 U
Dichloroethane 1,1	5	ug/L	5.0 U	1.00 U	0.5 U
Dichloroethane 1,1	7	ug/L	5.0 U	1.00 U	0.5 U
Dichloroethane 1,2	5	ug/L	5.0 U	1.00 U	0.5 U
Acetone	50	ug/L	10.0 U	10.0 U	1 U
Carbon disulfide	5	ug/L	5.0 U	10 U b/	-- c/
Carbon tetrachloride	5	ug/L	5.0 U	1.00 U	0.5 U
Chloroform	NA	ug/L	5.0 U	0.216 J	0.4 J
Methylene chloride	5	ug/L	2.0 BJ	0.209 J	1 U
Tetrachloroethene	5	ug/L	5.0 U	1.00 U	0.5 U
Toluene	2000	ug/L	5.0 U	1.00 U	0.5 U
Trichloroethene (TCE)	5	ug/L	5.0 U	1.00 U	0.5 U
Vinyl chloride	NA	ug/L	10.0 U	1.00 U	1 U
Americium 241 d/	4	pCi/L	0.008 U	0.0008	0.006
Gross Alpha	15	pCi/L	0.14 U	-0.02	0.223
Gross Beta	50	pCi/L	0.23 U	2.3	1.35
Plutonium 239/240	15	pCi/L	0.001 U	0.00	0.00
Strontium 89/90	8	pCi/L	0.07 U	0.02	0.033
Tritium	20000	pCi/L	180 U	90	173
Uranium (total - calculated)	40	pCi/L	0.497 U	0.516	0.079
Cadmium	10	ug/L	3.8 U	3.0 B	3.1 U
Chromium	50	ug/L	5.2 B	3.0 U	2.8 U
Copper	200	ug/L	8.4 B	3.6 B	21.3 B
Iron (total)	1000	ug/L	43.4 B	24.4 B	29.0 B
Lead	50	ug/L	1.0 U	2.0 U	3.4
Selenium	10	ug/L	1.4 U	6.6	2.9 U
Zinc	2000	ug/L	11.1 B	3.0 U	40.7
Chloride	250	mg/L	14.6	24	5.15
Nitrate + Nitrite	10	mg/L	0.904	0.6	0.36
Sulfate	250	mg/L	9.9	12	24.4
Total Dissolved Solids (TDS)	400	mg/L	90	97	82
pH	6.5-9.0	S.U.	8.25	6.7	7.02

a/ Refer to Appendix A for an explanation of the data qualifiers.

b/ The GRRASP requires that data be reported as estimated if compounds are detected at or above 1 ug/L but below 10 ug/L.

c/ "--" = Data not currently available.

d/ Note that this table does not include the error bound on the radiological data.

TABLE 3-5
COMPARISON OF SELECTED RS-7 TREATED EFFLUENT DATA TO OU2 ARARS
APRIL, MAY, JUNE 1995

COMPOUND	OU2	Units	RS-7: Treated Effluent			
			1-May-95	22-May-95	31-May-95	
1,1,1-Trichloroethane	ARAR NA a/	ug/L	0.5 U b/	-- c/	0.5 U	
1,1-Dichloroethane	NA	ug/L	0.5 U	--	0.5 U	
1,1,1-Dichloroethene	7	ug/L	0.5 U	--	0.5 U	
1,2-Dichloroethane	NA	ug/L	0.5 U	--	0.5 U	
Carbon Tetrachloride	5	ug/L	0.5 U	--	0.5 U	
Chloroform	1	ug/L	0.5 U	--	0.5 U	
Methylene Chloride	NA	ug/L	0.5 U	--	0.5 U	
Tetrachloroethene	1	ug/L	0.5 U	--	0.5 U	
Trichloroethene	5	ug/L	0.5 U	--	0.5 U	
Vinyl Chloride	2	ug/L	0.5 U	--	0.5 U	
cis-1,2-Dichloroethene	NA	ug/L	0.5 U	--	0.5 U	
Gross Alpha d/	11	pCi/L	1.416 C	1.54 C	-0.737 C	
Uranium (total - calculated)	10	pCi/L	0.288	0.706	0.402	
Aluminum (total)	200	ug/L	33 U	--	675	
Copper (total)	25	ug/L	2 U	--	2 U	
Iron (total)	1000	ug/L	18 B	--	21.8 B	
Lead (total)	5	ug/L	2 U	--	2 U	
Manganese (total)	1000	ug/L	8.7 B	--	2 U	
Manganese (dissolved)	50	ug/L	9.9 B	--	2 U	
Selenium (total)	10	ug/L	3 U	--	3 U	
Zinc (total)	50	ug/L	7.8 B	--	3 U	
Hardness (calculated from Ca and Mg as CaCO3)	NA	mg/L	60	--	266	
Sulfate	NA	mg/L	--	--	--	
TDS	NA	mg/L	--	--	--	

a/ "NA" = No ARAR exists for this constituent.

b/ Refer to Appendix A for an explanation of the data qualifiers.

c/ "--" = Data not available.

d/ Note that this table does not include the error bounds on the radiological data.

4.0 ENVIRONMENTAL COMPLIANCE

Period of Non-Collection

On September 19, 1995 it was discovered that the sump pump in the SW-059 weir was not operating. It is estimated that the pump was not operational for approximately 23 hours between September 18 and 19, 1995. All appropriate notifications were made, and the situation was immediately corrected.

5.0 ANTICIPATED OPERATIONS FOR NEXT QUARTER

Collection and treatment of water from the French Drain Sump will continue as normal. Water from the Collection Well will continue to be collected in the portable tank and transported to Building 891 for off-loading and treatment. Purge, incidental, and decontamination pad waters will continue to be accepted and treated.

Collection and transport of SW-059 water to Building 891 will continue via trailer-mounted container until construction of the above-ground storage tank adjacent to SW-059 is complete. Water collected from SW-059 will continue to be treated in Building 891 until consolidation of the Sitewide Treatment Facility is complete.

Once the Sitewide Treatment Facility is operational, the anticipated date is the end of November 1995, the flowpath for the water to be treated will be chosen based upon the influent contaminants and best anticipated method of treatment. Efforts will be made to minimize waste generation during Sitewide Treatment Facility operations.

Appendix A

Data Qualifiers and Descriptions

Selected Laboratory Data Qualifiers and Descriptions

<u>Qualifier</u>	<u>Description</u>
B	< method detection limit but >= instrument detection limit (INORGANIC)
B	Analyte found in blank and sample (ORGANIC)
D	Compound identified using secondary dilution factor (ORGANIC)
E	Concentration exceeds calibration range of instrument (ORGANIC)
E	Estimated due to interference (INORGANIC)
J	Estimated value, < sample's detection limit
N	Spiked recovery not within control limits (INORGANIC)
S	Determined by MSA (INORGANIC)
U	Undetected, analyzed for but not detected

Selected Data Validation Qualifiers and Descriptions

<u>Qualifier</u>	<u>Description</u>
A	Data is acceptable, with qualifications
JA	Estimated, acceptable
R	Data is rejected
V	Data is valid
Y	Analytical results in validation process
Z	Validation was not requested or performed